

## Quality in the Echo Lab

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How many scans does your department perform per year?

1. < 2,000
2. Between 2,000 and 5,000
3. Between 5,000 and 8,000
4. Between 8,000 and 10,000
5. > 10,000

## Quality

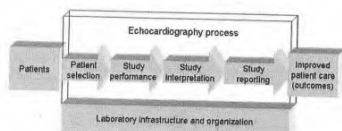
1. An assessment of how well a delivered service conforms to the client's expectations
2. A system for verifying and maintaining a desired level of quality in an existing product or service by careful planning, use of proper equipment, continued inspection, and corrective action as required



'despite the fact that measuring a high level of quality has become an important issue for patients, physicians and payers, relatively limited attention has been focussed on measures of quality control and quality improvement in echocardiography' EAE 2009

...little data to identify where quality gaps exist or what these markers should be to lead to better patient care and outcomes...

## Framework for Evaluating Quality of CV Imaging



European Journal of Echocardiography 2009

Improved patient care through thoughtful...

- Patient selection
- Image acquisition
- Image interpretation and reporting
- Communication of results

### Benefits

- Develop and maintain quality in the Echo Service
- Ensure quality standards are consistent for interpretation and reporting
- Continuing education
- Happier workforce!!!

### Patient selection / Referral indications

- Appropriate / inappropriate criteria
- Utilise existing Guidelines
- Review / Update when necessary

### Do you vet all echo requests for your service?

1. Yes
2. No

### EAE Recommendations

- Audit percentage of appropriate and inappropriate tests
- Look at uncertain indications for testing
- Look at referrers and practice
- Review interpreting practice

### Image Acquisition

- Cycle capture (3 loops/5 loops)
- Scan assist or equivalent
- Minimum Datasets for different conditions e.g. Normal, Aortic Stenosis, mitral regurgitation

Departmental / local guidelines based on governing body

### How many loops do you store for a 'normal' exam?

1. 1
2. 2
3. 3
4. 4
5. 5

Does your department use Scan Assist or equivalent?

1. Yes
2. No

How long are your average echo slots?

1. 20 mins
2. 30 mins
3. 40 mins
4. 50 mins
5. 60 mins

Appointment times (ASE 2011)

- 45 – 60 minutes for 'complete' study
- Additional 15 – 30 minutes may be required for complicated studies

...how can we predict??

Interpretation / Reporting

- Patient demographics etc
- Similar in word and structure
- Key elements with findings and summary
- Summary should include
  - Identifies key points and abnormalities, correlation to referral reason and comparison with previous studies (new, unchanged or progressive)
- Technical quality
  - Document any missing views

An English professor wrote the words:

“A woman without her man is nothing”

on the chalkboard and asked his students to punctuate it correctly.

All of the males in the class wrote:

“A woman, without her man, is nothing.”

All of the females in the class wrote:

“A woman: without her, man is nothing.”

Punctuation is powerful

Interpretation / Reporting (cont'd)

- ? Produce standard reporting template for different conditions and then insert values
  - *‘echo reports should include a uniform outline and common language so all reports are similar in word and structure’ ASE 2011*
- Produce set phrases for recurrent issues e.g. lung artefact or insufficient tricuspid regurgitation
- Amended reports
  - Must include date and time of amendment with key differences and any actions

### Communication of report

- In patient – within 24 hours
- Out patient – end of next business day
- Process for abnormal tests  
*utilise other staff members for timeliness*

### Role of the sonographer

- Although not directly responsible for revising care plans based on echo results, required to be skilled in interpretation and results in the context of patient's illness
- Develop and implement strategies to educate referring providers about what echo can and cannot measure, when to use it, and what findings mean for both diagnostic and therapeutic decision-making
- This could be direct with referrer or with cardiologist through discussion at the time
- Meetings then should be used as a platform for discussing unusual or unexpected findings

### Quality Measures for Echo

- Image acquisition
- Completeness and quality - %age of study images to be present, all components for valve quantitation present
- Quarterly interpretation reviews
- Cross modality comparisons
- Inter-observer quantitation e.g. ejection fraction or valve regurgitation
- Results then annually presented

### Standards and Accreditation

- Professional/practice
- Department-based and Hospital Trust-based
- Accreditation – personal and departmental
- CPD in-house and external
- Meetings – weekly/monthly
- Teaching – level of teaching, who by and who to?
- Implementation/adherence to guidelines

### Which governing body do you adhere to?

1. None
2. BSE
3. EACVI
4. ASE
5. Other

### Areas for Improvement

- Audit
- Benchmarking
- CPD – educational material available in central location (CD's, journals, internet access)
- Conferences and courses available
- Need a method of continuously examining processes to make them more effective
- Focus on the process, not the individual

## Audit

- Annual audit of appropriate versus inappropriate referrals
- Process in place to reduce inappropriate referrals (referral information on form / education of referrers)
- Track waiting times
- Track uninterpretable studies rate
- Appropriate test selection

## Peer Review

- Ability for feedback
- Intermittent peer review of both performance and interpretation of studies should be performed
- Both physician and sonographer involvement
  - Differences in interpretation styles and performance should be reconciled
- Individual versus group review
- Confidentiality

*Document it!*

## Support for improvement

Where from?

- Fellow sonographers
- Doctors
- Managers
- Forums –
  - National
  - UK forum (BSE)
  - European forum (EACVI)
  - American forum (ASE)

‘Quality can be measured as adherence to established guidelines for the use of a technology to ensure patient satisfaction and outcomes’ ASE 2011



## Equipment

- Maintenance record
- Routine safety inspections and testing
- Cleaning schedule
- Use hospital resources or create policies adhering to manufacturer's guidelines or ask application specialist
- Age
- Ability

## Conclusion

- Strive to provide a departmental framework for echo quality assessment and improvement
- Adhere to high quality standards for requesting, acquiring, interpreting and communicating scans
- Create realistic goals
- Review and refine recommendations
- Following these standards should lead to continued quality improvement, patient and provider satisfaction, and improved patient outcomes

